

March 1, 2019  
Keio University Hospital

## **World's Smallest Baby Boy Born at Keio University Hospital: Extremely Low Birth Weight Infant Weighing Just 268 Grams at Birth Leaves Hospital in Good Health**

In February 2019, a baby boy who weighed just 268 grams at birth was released from Keio University Hospital's Department of Pediatrics, headed by Prof. Takao Takahashi. Born at 24 weeks, the extremely low birth weight (ELBW) infant spent five months in the hospital's neonatal unit and was cared for by attending physicians Dr. Takeshi Arimitsu and Associate Prof. Mariko Hida. The world's smallest baby boy left the hospital in good health without any serious complications.

### **1. The 268-Gram Baby Boy**

Recently, there have been remarkable advances in neonatal medicine, and the survival rate of extremely low birth weight (ELBW) infants weighing less than 1,000 grams is said to have reached nearly 90% in Japan. However, the survival rate for newborns weighing less than 300 grams is still low, and ELBW infant boys are much less likely to survive than ELBW infant girls. According to the University of Iowa's Tiniest Babies Registry<sup>1</sup>, there have only been 23 children that weighed less than 300 grams at birth who have survived and were able to leave the hospital. But of those 23, only 4 were boys, and the survival rate of an ELBW boy is just 1/6 that of an ELBW girl. The smallest ELBW baby boy to ever leave a hospital in good health weighed 274 grams with a gestational age of 24 weeks when it was born in the city of Göttingen in Lower Saxony, Germany, in 2009.

The latest ELBW baby boy born at Keio University Hospital weighed just 268 grams with a gestational age of 24 weeks, but after closely monitoring the baby's cardiorespiratory system and providing careful nutritional management, he was able to drink milk on his own like other babies, weighing 3,238 grams when he was discharged from the hospital without any serious complications.

### **2. Extremely Low Birth Weight (ELBW) Infants**

Extremely low birth weight (ELBW) infants are those that are born weighing less than 1,000 grams. Preterm babies (born less than 37 weeks after a mother's last menstrual period) are at higher risk for various complications due to their bodies not being fully matured. Those risks can include respiratory disorder, heart failure, ruptured bowel, brain injury, blindness, and hearing loss. An underdeveloped immune system also means that they are more susceptible to infections.

In addition, ELBW infant boys are known to have low survival rates in addition to the fact that they are at a high risk for adverse outcomes related to the above complications. The reasons for that are still a matter of speculation, but lung maturation is considered to be slower in boys than in girls, making them vulnerable to oxidative stress.

This newborn, at 268g, surpasses all other baby boys recorded by the the University of Iowa's Tiniest Babies Registry.

	Birth Year	Birth Place	Birth Weight	Gestational Age
1	2009	Germany	274 grams	24 weeks
2	2015	Japan	289 grams	24 weeks
3	2011	Japan	294 grams	24 weeks
4	2009	Japan	297 grams	23 weeks
5	2014	California, USA	311 grams	25 weeks
6	1998	Germany	320 grams	25 weeks
7	2003	New Jersey, USA	320 grams	23 weeks
8	2011	Germany	320 grams	23 weeks
9	2004	Iowa, USA	325 grams	26 weeks
10	2003	Dominican Republic	330 grams	23 weeks

### **About the Keio University School of Medicine Department of Pediatrics**

The Department of Pediatrics provides a core training facility for fellows of the Japan Society of Perinatal and Neonatal Medicine (JSPNM) program for neonatology specialists. The Keio University Hospital neonatal unit is divided into two different areas: the Neonatal Intensive Care Unit (NICU), which has 9 beds, and the Growing Care Unit (GCU), which has 18 beds. Despite its modest size, the unit has discharged a number of ELBW infants, including one baby girl born weighing 289g at 23 weeks in 1999 and another weighing just 265g at 25 weeks in 2007 (the second smallest baby in the world at the time).

\*Please direct any requests or inquiries to the contact information provided below.

\*We have sent this news release to the MEXT Press Club, Science Press Club, MHLW Press Club, MHLW Hibiya Club, and society and education departments of other media outlets.

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#### [Source of this release]

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